

REMARKS

Claims 1-16 are in the Case. Claims 13-16 were canceled as drawn to non-elected subject matter. Claims 1-12 are under consideration in this application.

Claims 1-12 are rejected 35 USC § 112, and 103.

Claims 1, 3, and 11 have been amended to more clearly define Applicant's invention.

Claim 2 is canceled as the limitations of this claim are now found in amended Claim 1. No new matter has been added.

Applicants take notice of the finality of the election of group 1, (Claims 1-12), that the IDS's received 12/3/01 and 5/20/02 have been entered and considered and that the priority date is granted to 9/8/2000.

The examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made. The Examiner's presumption is correct.

Claim Rejections – 35 USC § 103

Claims 1-12 stand rejected under 35 USC § 103(a) as being unpatentable over the combination of each of Brdjanovic (Wat. Sci. Tech., Vol. 37, No. 4-5, pp 541-547, hereinafter "Brdjanovic") and Lee (Waste Management 19, pp. 133-139, hereinafter "Lee") in view of Chuang (Wat. Sci. Tech., Vol. 38, No. 1 pp. 107-114, hereinafter "Chuang").

Brdjanovic teaches a new assay for glycogen determination in sludge, and for the disclosure that P-removing bacteria store fatty acids as PHA.

Lee teaches that PHA's are accumulated in response to unfavorable growth conditions.

Chuang is cited for the teaching that PHA content of microorganisms is closely related phosphorus release and organic loading.

None of the cited references demonstrates a relationship between an internal storage molecule such as PHA or glycogen and the levels of feed nutrients in the culture such as sulfate, sulfide, phosphate, and a nitrogen.

It is the Examiner's opinion that it would have been obvious to the skilled person to monitor levels of PHA to adjust feed nutrients in wastewater sludge as taught by Chuang since all the references are directed to measuring wastewater treatment processes by determining PHA concentrations. Applicants respectfully traverse.

Applicants argue that the present invention is not obvious in view of the cited art because the art teaches only that PHA concentrations in wastewater sludge may be used to monitor organic loading (carbon). There is no indication in any of the references that there is a correlation between PHA concentration and Feed Nutrients as defined in the specification (Page 8 beginning at line 9).

The present claims are directed to a method for the use of PHA concentrations to determine the appropriate levels of feed nutrients to be applied, and not to monitor carbon loading. Chuang makes no reference to altering the levels of feed nutrients (sulfate, sulfide,

phosphate, and a nitrogen preferably in the form of free ammonia, sulfate, potassium phosphate or ammonium phosphate) in response to alterations in PHA concentrations. As the Examiner notes on page 4 of the present action, the observations of Chuang indicate that ..." [W]hen under high organic loading conditions, sludge exhibits a large amount of PHA . Under low organic loading conditions there is low PHA content. Organic loading should be carefully controlled for phosphorus removal." Thus Chuang teaches that the amount of carbon in the sludge directly affects the concentration of PHA and phosphorus. Chuang implies that PHA levels could be a way to monitor the limits of organic loading. Chuang never suggests that PHA could be a way to monitor the limits of phosphorus or any other feed nutrient, nor does he suggest that removal of phosphorus absent the additional reduction in organic loading will have any effect on PHA levels.

Applicant's discovery is that the levels of PHA are an indication of feed nutrient parameters independent of organic loading, which is not taught in any of the cited references. On the strength of these arguments applicants respectfully request removal of this rejection under 35 USC § 103(a).

Claim Rejections – 35 USC § 112

Claims 1, 4-12 are rejected under 35 USC § 112, first paragraph for lack of enablement. It is the examiner's opinion that the terms "internal storage molecule" lacks sufficient support in the specification.

The limitations of Claim 2 are now incorporated into Claim 1. Applicants submit that this amendment overcomes the rejection under 35 USC § 112, first paragraph and respectfully request removal of this rejection and reconsideration of the claims as amended.

Claims 1-12 are rejected under 35 USC § 112, second paragraph for indefiniteness. Specifically: the preamble of Claim recites "monitoring" but has no monitoring step; and there are many instances of lack of antecedent basis as in the use of "the biocatalytic efficiency" in claim 1.

Applicants have amended claim 1 to overcome this rejection as it applies to the lack of a monitoring step.

Applicants submit that the recitation of a limitation in the body of the claims that is only recited in the preamble does not constitute lack of antecedent basis for the terms (see MPEP 2111.02) and submit that the claims are not indefinite in this respect.

In view of the foregoing Applicants respectfully request removal of all rejections and reconsideration of the claims as amended.

Respectfully submitted,



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